



PCT09

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002
TIME: 11:11:00

Input Set : A:\Hvd-033.app
Output Set: N:\CRF3\06122002\1937735.raw

3 <110> APPLICANT: McMahon, Andrew P
4 Kispert, Andreas
5 Vainio, Seppo
7 <120> TITLE OF INVENTION: Induction of Kidney Tubule Formation
9 <130> FILE REFERENCE: 21508-033 NATL
11 <140> CURRENT APPLICATION NUMBER: 09/937,735
C--> 12 <141> CURRENT FILING DATE: 2002-04-29
14 <150> PRIOR APPLICATION NUMBER: PCT/US99/07745
15 <151> PRIOR FILING DATE: 1999-04-08
17 <160> NUMBER OF SEQ ID NOS: 12
19 <170> SOFTWARE: PatentIn Ver. 2.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 370
23 <212> TYPE: PRT
24 <213> ORGANISM: Homo sapiens
26 <400> SEQUENCE: 1
27 Met Gly Leu Trp Ala Leu Leu Pro Gly Trp Val Ser Ala Thr Leu Leu
28 1 5 10 15
30 Leu Ala Leu Ala Ala Leu Pro Ala Ala Leu Ala Ala Asn Ser Ser Gly
31 20 25 30
33 Arg Trp Trp Gly Ile Val Asn Val Ala Ser Ser Thr Asn Leu Leu Thr
34 35 40 45
36 Asp Ser Lys Ser Leu Gln Leu Val Leu Glu Pro Ser Leu Gln Leu Leu
37 50 55 60
39 Ser Arg Lys Gln Arg Arg Leu Ile Arg Gln Asn Pro Gly Ile Leu His
40 65 70 75 80
42 Ser Val Ser Gly Gly Leu Gln Ser Ala Val Arg Glu Cys Lys Trp Gln
43 85 90 95
45 Phe Arg Asn Arg Arg Trp Asn Cys Pro Thr Ala Pro Gly Pro His Leu
46 100 105 110
48 Phe Gly Lys Ile Val Asn Arg Gly Cys Arg Glu Thr Ala Phe Ile Phe
49 115 120 125
51 Ala Ile Thr Ser Ala Gly Val Thr His Ser Val Ala Arg Ser Cys Ser
52 130 135 140
54 Glu Gly Ser Ile Glu Ser Cys Thr Cys Asp Tyr Arg Arg Arg Gly Pro
55 145 150 155 160
57 Gly Gly Pro Asp Trp His Trp Gly Gly Cys Ser Asp Asn Ile Asp Phe
58 165 170 175
60 Gly Arg Leu Phe Gly Arg Glu Phe Val Asp Ser Gly Glu Lys Gly Arg
61 180 185 190
63 Asp Leu Arg Phe Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Thr
64 195 200 205
66 Thr Val Phe Ser Glu Met Arg Gln Glu Cys Lys Cys His Gly Met Ser

ENTERED

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002
TIME: 11:11:00

Input Set : A:\Hvd-033.app
Output Set: N:\CRF3\06122002\I937735.raw

67	210	215	220
69	Gly Ser Cys Thr Val Arg Thr Cys Trp Met Arg Leu Pro Thr Leu Arg		
70	225	230	235
72	Ala Val, Gly Asp Val, Leu Arg Asp Arg Phe Asp Gly Ala Ser Arg Val		240
73	245	250	255
75	Leu Tyr Gly Asn Arg Gly Ser Asn Arg Ala Ser Arg Ala Glu Leu Leu		
76	260	265	270
78	Arg Leu Glu Pro Glu Asp Pro Ala His Lys Pro Pro Ser Pro His Asp		
79	275	280	285
81	Leu Val Tyr Phe Glu Lys Ser Pro Asn Phe Cys Thr Tyr Ser Gly Arg		
82	290	295	300
84	Leu Gly Thr Ala Gly Thr Ala Gly Arg Ala Cys Asn Ser Ser Ser Pro		
85	305	310	315
87	320		
88	Ala Leu Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly His Arg Thr		
89	325	330	335
90	Arg Thr Gln Arg Val Thr Glu Arg Cys Asn Cys Thr Phe His Trp Cys		
91	340	345	350
93	Cys His Val Ser Cys Arg Asn Cys Thr His Thr Arg Val Leu His Glu		
94	355	360	365
96	Cys Leu		
97	370		
100	<210> SEQ ID NO: 2		
101	<211> LENGTH: 133		
102	<212> TYPE: PRT		
103	<213> ORGANISM: Homo sapiens		
105	<400> SEQUENCE: 2		
106	Cys Lys Cys His Gly Leu Ser Gly Ser Cys Glu Val Lys Thr Cys Trp		
107	1	5	10
			15
109	Trp Ser Gln Pro Asp Phe Arg Ala Ile Gly Asp Phe Leu Lys Asp Lys		
110	20	25	30
112	Tyr Asp Ser Ala Ser Glu Met Val Val Glu Lys His Arg Glu Ser Arg		
113	35	40	45
115	Gly Trp Val Glu Thr Leu Arg Pro Arg Tyr Thr Tyr Phe Lys Val Pro		
116	50	55	60
118	Thr Glu Arg Asp Leu Val Tyr Tyr Glu Ala Ser Pro Asn Phe Cys Glu		
119	65	70	75
			80
121	Pro Asn Pro Glu Thr Gly Ser Phe Gly Thr Arg Asp Arg Thr Cys Asn		
122	85	90	95
124	Val Ser Ser His Gly Ile Asp Gly Cys Asp Leu Leu Cys Cys Gly Arg		
125	100	105	110
127	Gly His Asn Ala Arg Ala Glu Arg Arg Arg Glu Lys Cys Arg Cys Val		
128	115	120	125
130	Phe His Trp Cys Cys		
131	130		
134	<210> SEQ ID NO: 3		
135	<211> LENGTH: 133		
136	<212> TYPE: PRT		
137	<213> ORGANISM: Homo sapiens		
139	<400> SEQUENCE: 3		

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002
TIME: 11:11:00

Input Set : A:\Hvd-033.app
Output Set: N:\CRF3\06122002\I937735.raw

140 Cys Lys Cys His Gly Val Ser Gly Ser Cys Glu Val Lys Thr Cys Trp
141 1 5 10 15
143 Arg Ala Val Pro Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys
144 20 25 30
146 Phe Asp Gly Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg
147 35 40 45
149 Ala Leu Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp
150 50 55 60
152 Leu Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg
153 65 70 75 80
155 Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser Lys
156 85 90 95
158 Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe His Thr
159 100 105 110
161 Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe His Trp Cys
162 115 120 125
164 Leu Phe Leu Ser Arg
165 130
168 <210> SEQ ID NO: 4
169 <211> LENGTH: 349
170 <212> TYPE: PRT
171 <213> ORGANISM: Homo sapiens
173 <400> SEQUENCE: 4
174 Met Asn Arg Lys Ala Leu Arg Cys Leu Gly His Leu Phe Leu Ser Leu
175 1 5 10 15
177 Gly Met Val Cys Leu Arg Ile Gly Gly Phe Ser Ser Val Val Ala Leu
178 20 25 30
180 Gly Ala Thr Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
181 35 40 45
183 Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
184 50 55 60
186 Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
187 65 70 75 80
189 Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
190 85 90 95
192 Leu Lys Val Gly Ser Arg Asp Gly Ala Phe Thr Tyr Ala Ile Ile Ala
193 100 105 110
195 Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr His Gly Asn Leu
196 115 120 125
198 Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Arg Asp
199 130 135 140
201 Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
202 145 150 155 160
204 Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
205 165 170 175
207 Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
208 180 185 190
210 Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
211 195 200 205

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002
TIME: 11:11:00

Input Set : A:\Hvd-033.app
Output Set: N:\CRF3\06122002\I937735.raw

213 Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe Arg Glu Leu
214 210 215 220
216 Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His Val Glu Pro
217 225 230 235 240
219 Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
220 245 250 255
222 Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
223 260 265 270
225 Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
226 275 280 285
228 Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
229 290 295 300
231 Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
232 305 310 315 320
234 Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
235 325 330 335
237 Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
238 340 345
241 <210> SEQ ID NO: 5
242 <211> LENGTH: 133
243 <212> TYPE: PRT
244 <213> ORGANISM: Homo sapiens
246 <400> SEQUENCE: 5
247 Val Lys Cys Gly Val Ser Gly Ser Cys Thr Thr Lys Thr Cys Trp Thr
248 1 5 10 15
250 Thr Leu Pro Lys Phe Arg Glu Val Gly His Leu Leu Lys Glu Lys Tyr
251 20 25 30
253 Asn Ala Ala Val Gln Val Glu Val Val Arg Ala Ser Arg Leu Arg Gln
254 35 40 45
256 Pro Thr Phe Leu Arg Ile Lys Gln Leu Arg Ser Tyr Gln Lys Pro Met
257 50 55 60
259 Glu Thr Asp Leu Val Tyr Ile Glu Lys Ser Pro Asn Tyr Cys Glu Glu
260 65 70 75 80
262 Asp Ala Ala Thr Gly Ser Val Gly Thr Gln Gly Arg Ile Cys Asn Arg
263 85 90 95
265 Thr Ser Pro Gly Ala Asp Gly Cys Asp Thr Met Cys Cys Gly Arg Gly
266 100 105 110
268 Tyr Asn Thr His Gln Tyr Thr Lys Val Trp Gln Cys Asn Cys Lys Phe
269 115 120 125
271 His Trp Cys Cys Ser
272 130
275 <210> SEQ ID NO: 6
276 <211> LENGTH: 5607
277 <212> TYPE: DNA
278 <213> ORGANISM: Homo sapiens
280 <400> SEQUENCE: 6
281 atgtatgtat gtatgtatgtat acgtgcgtgc acctgtgtgt gcttgggtgc 60
282 agtggggctc agacatcacc tgattccctg gaactggagt tacaggtggc tataagccac 120
283 cacttgggtg ctgagaacag agtccgggcc tctggcagag cagtcagtgc ttttagccac 180

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002

TIME: 11:11:00

Input Set : A:\Hvd-033.app

Output Set: N:\CRF3\06122002\I937735.raw

284 tgagccactc tcatcccccc aattatgttc atcttgagtt gggcaggtac ggtggcggaa 240
 285 taggcctgta atcccagcag tcactggacc atcatgggtt ctacatatta aacctttatg 300
 286 ttaggttaggg tcacacagca agatccggc acaaaaccag caacaacaaa aaccaaaagg 360
 287 agccagcttc ttcccacaag cattctttcc ctcaggtctt cagctccatc tgacagctac 420
 288 tcggctgggt gtcctatcct ttctgagct agttgccaga gaaacaagcc cggttcatct 480
 289 tcatgactag cacatctaata gataagcaca ggttactca aggtgccata gagtgacact 540
 290 agtacccag agcgcacagaa tgacacccat gagtgcacgt cgtaatcac aaacacacac 600
 291 acacacacac acacacacac acacacacac tcatgcaccc acctgcaaaac acaattgcag 660
 292 ccttctggac gtctctgtc acagccccac ctccttcctg atacactgcg ttaagtgggt 720
 293 actgtaaaca aatgacttca tgctctccct gtcctgagcc aaattacaca attatttgg 780
 294 aagggtctcaa aatgttcttc gttagaagtt tctggataca ccaatacaca ggagcgtgca 840
 295 ccctcagaac acatgtacac tttgacttaa ttcacgggt gacacacccg cgcttacact 900
 296 ccccctagcc cacagaggca aactgctggg cgcttctgag tttctcactg ccaccagctc 960
 297 gtttgctca gcctacccccc gcaccccgcg cccggaaatc cctgaccaca gctccaccca 1020
 298 tgctctgtct cttcttttc cttctctgtc cagccgtcg ggttcctggg tgaggaagtg 1080
 299 tctccacggg gtcgctggct agaaccacaa ctttcattctt gccattcaga atagggaaaga 1140
 300 gaagagacca cagcgttaggg gggacagagg agacggactt cgagaggaca gccccaccgg 1200
 301 cgctgtggg ggaggcaatc caggctgcaaa acagggtgtc cccagcgcatt tgcccccg 1260
 302 cccccctggcg gatgctggc cccgacgggc tccggacgcg cagaagagtg agggccggc 1320
 303 gctggggagg ccatccaaag gggaggggtc ggccggcagt gcagacctgg agggggggcc 1380
 304 accaggcagg gggcgggggt gaggccccac ggttagcctg tcagctctt gctcagaccg 1440
 305 gcaagagcca cagcttcgtc cgccactcat tgcgtgtggc cctgaccagt gcgcctgg 1500
 306 gcttttagtgc ccccccggc ccggaggggc agcctttct cactgcagtc agcgcgc 1560
 307 ctataagagg cctataagag gcccgtcctc cccgactggc tgcttcagcc cagcagccag 1620
 308 gacagcgaac catgtcgctt gcccggccccc tccagactta ttagagccag cctgggaact 1680
 309 cgcattactg ccctcaccgc tgcgtccagt cccaccgtcg cggacagacaa ccacagtgt 1740
 310 cagaaccgcg gcacagaacc agcaaggca ggcaggccat ggggctctgg gcgcgtgtgc 1800
 311 ccagctgggt ttctactacg ttgctactgg cactgaccgc tctgcccgc gcccggctg 1860
 312 ccaacagtag tggccatgg tggtaagtgta gtagtacgg ggtccgcac ttgtcctggg 1920
 313 gcaaagagcc aggcacgggc cttacccagc tcccacgtc tggggatcac caacctacag 1980
 314 acccccctcg tgcattgtga cttcacatcc aggggctca cacctagaac tagctctgt 2040
 315 gaagtggggc acatcattgg catgcagaag cccagataca ccaggctcag agaccattcc 2100
 316 catttaatac gccccgttt ctgctgagca acagggtccca acctcgctgt ggtgggtgt 2160
 317 cagggttccc ttaggtctt aaccaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa accagatatt 2220
 318 agctttgagg tgagggagtg gaattccctaa gttttcaag gtgggcaagg ctgcaggtgg 2280
 319 gtttctcctt cggggctga cttgaagaaa ggaagagcta aggttagccat gcctttctg 2340
 320 tccactact agactctgg a gtcagggcc aggcaaggat aggggtgtac agcctgtatg 2400
 321 gtttagatgc aggtccctc ccctggactg aaccctttagt catcccgcca ggggcacgt 2460
 322 gaacatagcc tcctccacga acctgttgc g gattccaag agtctgcacg tgggtctcg 2520
 323 gcccagtctg cagctgtca gcccgaagca gcccggactg atccgacaga accccgggat 2580
 324 cctgcacagc gtgagttgg g gtcaggccat cgcgtgtcg gagtgcacaaat ggcaattccg 2640
 325 aaaccgcgcg tggaactgc ccaactgctcc gggggccccc ctcttcggca agatcgtaa 2700
 326 ccgagggtggg tgcccaggaa agcgcacgctt ccgggattaa gggaaaagca ggggtcatctc 2760
 327 cagggcatac gcccggcaag gcaggaaaga catcccaggg ttatatgtga tcaaactgag 2820
 328 aatcgccctgg tgccggcagt taccgttagt cagcaccaga ttctttcttag ccttgcgttg 2880
 329 ttagcatgt cttaacgtt gtcggccact gcccacaga aagggaattc cggatcggtgg 2940
 330 gcccgtggcg acagctgttt ttccctagcc ttcccaaag gtacctgggaa agctgatctc 3000
 331 tgagggctag ctaggttgc gtttcgcacc cagcaaagtt tgcaactgcata atactagtag 3060
 332 cgatcttggc tatcgatatt tttctactt gggaaatctcc ccttggagct gctctgctag 3120

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/937,735

DATE: 06/12/2002

TIME: 11:11:01

Input Set : A:\Hvd-033.app

Output Set: N:\CRF3\06122002\I937735.raw

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date